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ABSTRACT

Recent research has focused not only on trying to explain the low rate of diffusion and adoption of innovative programs, but also on the lack of use of "knowledge," more broadly defined to include ideas, information, craft skills, materials, experience, and the like. It is widely acknowledged that disproportionally more educational knowledge exists than is put to use. It is also argued that knowledge use in schools is governed by complex interactions of factors associated with the knowledge itself, the users and the disseminators, and the social and organizational context involved. To explore the validity of models for explaining staff use of professional knowledge, the ratings of the utilization impact of 72 workshops by 467 teachers and other participants were regressed on, and correlated with, their background characteristics, personal concerns, and psychological traits; their school characteristics and climate; and alterable features of the workshops. Controlled for the relatively non-alterable variables, knowledge use is significantly associated with school climate variables such as equality of staff treatment, goal direction, and capacity to deal with problems as well as such workshop features as clear advance explanations, job relevance, participant or consultant initiation of workshop, total hours of training, and specific methods of presenting knowledge. (Author/JMK)

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Staff, School, and Workshop Influences on Knowledge Use in Educational Improvement Efforts

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Running head: Knowledge Use

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Abstract

To explore the validity of models for explaining educational staff use of professional knowledge, the ratings of the utilization impact of 72 workshops by 467 teachers and other participants were regressed on, and correlated with, their background characteristics, personal concerns, and psychological traits, their school characteristics and climate, and alterable features of the workshops. Controlled for the relatively non-alterable variables, knowledge use is significantly associated with school climate variables such as equality of staff treatment, goal direction, and capacity to deal with problems as well as workshop features such as clear advance explanations, job relevance, participant or consultant initiation of workshop, total hours of training, and specific methods of presenting knowledge.

Staff, School, and Workshop Influences on Knowledge Use in Educational Improvement Efforts[1]

Recent research has focused not only on trying to explain the low rate of diffusion and adoption of innovative programs, but also on the lack of use of "knowlege," more broadly defined to include ideas, information, craft skills, materials, experience, and the like (Chin, 1980; Larsen, 1980). It is widely acknowledged that disproportionally more educational knowledge exists than is put to use. It is also argued that knowledge use in schools is governed by complex interactions of factors associated with the knowledge itself, the users and the disseminators, and the social and organizational context involved (Holzner and Marx, 1979). The present research focuses on knowledge use, broadly defined, in educational staff development efforts, and begins with a brief review of factors that prior research suggests have important bearings on knowledge use in educational and other organizations.

Source of Initiation

Much of the previous research and practice in this field approaches the problem from the administrator or outsider who attempts to "sell" developed programs to school staffs. Most of this research relies on a research-development-diffusion model (Rogers, 1962; Guba, 1967; Guba and Clark, 1975). In the evaluation of the State Capacity Building Program, for example, the NTS Research Corporation approaches schools as dissemination targets, as relatively passive "clients" whose individual and organizational characteristics are significant only as major or minor barriers to the

knowledge use sought by innovation advocates. NTS focuses on "user characteristics" in order to suggest variations in the roles of "linking agents" that may produce the resource utilization desired by the advocates in the schools (Havelock, 1973).

The linking process is also the focus of A Synthesis of Findings Across Five Recent Studies in Educational Dissemination and Change (Emrick and Peterson, 1978). The schools are again construed largely as passive clients (Ward, 1979). The Research and Development Utilization (RDU) Program, established by the National Institute of Education in 1976, starts with problem identification by school staff, but ultimately focuses on adoption and/or adaptation of available "solutions" (R & D products) to those problems. (Actually, RDU's dual aim is to promote better utilization of R & D products and to make permanent improvements in schools' problem-solving capabilities [Louis, 1979].) To date, however, the impact of external (and even internal) "linking agent" strategies appears to be modest (Firestone and Corbett, 1980), given the lengthy time requirements and the limited number of schools involved in any adoption campaign (Sieber, 1972).

Overall, most knowledge use studies have concentrated on outsider-initiated projects; inevitably then, much of the attention of research has focused on the reactions and "resistance" of teachers to the various interventions. Wolcott (1977) discusses this research bias in his provocative ethnography of an attempted school "innovation"--a version of PPBS (Program Planning and Budgeting Systems). Wolcott concludes that "teachers" and the purveyors of change ("technocrats") live in substantially different

worlds. He attributes many of the problems of innovation or change to these contrasting cultures and their differences in orientations and style:

> In educator circles, such events as have been chronicled [in this book] are identified as change (or "innovation") and resistance to change. What happens if we introduce other labels instead? Surely there was resistance to something, but what if we label that something as "interference" or even "meddling"? Resistance to interference or to meddling does not cast teachers so readily as hopeless reactionaires (p. 245).

School Characteristics

Zaltman (1979) calls attention to the impact on knowledge acquisition and use of structured characteristics of schools such as size, complexity, formalization, and centralization. For example, he proposes that "the more complex an organization is, the more easily knowledge is acquired;" but, on the other hand, "the more complex an organization is, the more difficult it is to use or implement knowledge (pp. 91-92). In his structural approach to organizations, Zaltman treats the organization, rather than the individual, as the user.

A related approach to "social settings" is to focus on the interactions of individuals with each other and with various "layers" of their environments. Paisley (1968), for example, proposes a framework of factors which influence the information needs of scientists and technologists. Paisley's scheme includes ten overlapping spheres of influence, ranging from the cognitive and motivational structure of the individual, to the individual's work team, to his formal and informal organizational norms, through yet other

layers to the legal, economic, political and cultural context of his organization. Similarly, Bronfenbrenner (1979) suggests that individual psychological development occurs as the individual interacts with the multi-layered sociocultural environment that surrounds him or her.

School Climate

Considerable evidence suggests that school climate and school improvement activity are related. For example, in reviewing decades of work on participants' perceptions of organizational environments, Walberg (1976) identifies three dimensions that recur across researchers and settings: interpersonal relationships; a "task" dimension which relates to learning or productivity; and an organizational dimension that emphasizes system maintenance and change. With respect to schools as organizations, Walberg concludes that such climate factors have substantial influences on staff morale and effectiveness, as well as on student achievement and student behavior. Many authors report significant relationships between organizational climate and the effectiveness of organizational problem-solving (Miles, 1965; Blake and Mouton, 1968; Hersey and Blanchard, 1977), and between climate and knowledge use in school improvement in particular (Hood, 1978; Louis, 1979).

Sphere of Concern

The importance of individual and collective motivation, variously termed will, needs, wants, drives, or impulses (Hersey and Blanchard, 1977), for a broad range of human behavior and with particular respect to knowledge use in schools, is well established (Hood, 1978; Holzner and Fisher, 1979; Zaltman, 1979; Weiss, 1980). Self-reported interest

in and capacity for attending to knowledge is linked to personality factors, and varies under differing conditions and at different times (Schroder and Suedfeld, 1971). Motives and incentives for knowledge use, for example, appear to be shaped, in part, by the cultural and organizational milieu of the individual: "In fact, socialization into an epistemic community requires that the motivational relevance of the particular kind of knowledge used by the work group be established as a value in itself. When this occurs, intrinsic motivation can be effectively supplemented by extrinsic rewards" (Holzner and Marx, 1979, p. 109).

By "epistemic community," Holzner and Marx mean the "frame of reference" of a group--its norms, values, skills, and habits--regarding knowledge use. That the occupants of specific roles may be regarded as epistemic communities is supported by Hood (1978), who found substantial variation among categories of education personnel in his survey of relative usefulness of various educational information products. For example, teachers ranked "classroom and curriculum materials" most useful, and "educational research and methodology" least useful, whereas social scientists gave opposite ranks to these types of products. Badura and Waltz (1980) also found that "professional culture," "organizational culture," perceived needs for particular information, and in addition, age and tenure, are related to knowledge utilization in complex organizations.

As used here, sphere of concern is related to these concepts and those used by several other investigators, such as the "frames of reference" discussed by Holzner and Marx (1979; see also Hood, 1978; Bandura and Waltz, 1980). Firestone and Corbett (1980) discuss the importance of

"problem-solving motivation" based on concern over the substantive area in question. They also use the concept of "social psychological ownership" of the problem area that a change project addresses. Erickson and Reller (1979) describe the separate but overlapping areas of concern of teachers and administrators, based on their "role sets." Louis (1979) reports that teachers show an increased sense of responsibility for school problems as an outcome of involvement in the problem-solving process. Mitroff and Mitroff (1979) propose that interpersonal conflicts over differences can either reinforce and harden areas of concern or can lead to "broadened perspectives."

Thus, there is evidence not only that sphere of concern must be tapped to engage people in information related to a school problem area, but also that sphere of concern can be broadened through involvement in change projects, and in conflict over problem priorities. Expansion of staff members' spheres of concern may prove to be a powerful lever in designing school improvement interventions.

Need for Achievement

Considerable individual variation exists regarding the strength of the desire to be competent and effective in one's work (McClelland, 1953). Definitions of school, teacher, and administrator effectiveness vary widely (Genova, 1976; Tjosvold, 1978), but individuals have their own definitions of effectiveness which influence the extent to which they acquire and use knowledge. However, high need-achievement individuals do not seek to satisfy this need in all situations; they do so only if they predict that they can influence the outcomes of their efforts (Hersey

and Blanchard, 1977).

Need for achievement within particular spheres of concern is thus conditioned by the expectancy of success. This "situational-contextual" explanation of the expression achievement motivation is described by Maehr (1978). Organizational climate is one of the situational variables that conditions expectancy level (Badura and Waltz, 1980), and thus might be used to alter teachers' anticipations. For example, Louis (1979) reports that school staff who engage in a problem-solving process that improves "morale" develop more "optimism about lessening the severity of the (school's) problems, and a new sense that problems are, in fact, tractable.

Need for Power or Control

The concept of "need-power" was developed by McClelland (1965) and especially by his associate, Winter (1973), who elaborated it and studied its place in the psychological economy of members of various professions. As a profession, educators score highly on measures of the need for power or control (Winter, 1973). People in psychology, business management (entrepreneurs) and the clergy score about as high on power and control measures as educators. While lawyers and politicians operate in the corridors of power, they tend to exhibit lower power and control motives than these other groups.

These findings may explain in part why, despite decades of innovations and planned change efforts, educators are so often cited as highly and effectively resistant to change. Teachers usually prefer to operate independently in their classrooms, declining opportunities to work in

teams (Deal and Celotti, 1980). Even in "open classrooms," student choices and activities are structured and substantially controlled by the teacher insofar as possible (Walberg and Thomas, 1972). Administrators typically have more control over budget, facilities, and other non-instructional areas than over the instructional activities of their supposed subordinates (Deal and Celotti, 1980).

Educators, moreover, are generally unenthusiastic seekers and users of knowledge about effective school practices (Runkel, 1978). It is rare for staff at the school or in a district to research a topic of concern, such as alternate approaches to student discipline or teaching reading to disadvantaged youth. It is also rare to find teachers sharing accumulated experiences or materials with each other (i.e., exchanging "craft knowledge"). Yet the majority of teachers do appear to be concerned about being effective educators (Runkel, 1978).

There is some evidence that need for control or power by educators is fundamental to the teaching and learning process. In their study of teachers and nurses, Dornbusch and Scott (1975) found the desire for more autonomy and freedom to be directly related to the complexity of tasks performed. Complex teaching or nursing tasks, characterized by low clarity, low predictability of outcomes, and low efficacy, require a high degree of autonomy and freedom for non-routine responses in ambiguous circumstances. Performing simple, more mechanical tasks that possess high clarity, high predictability, and high efficacy lends itself more appropriately to administrative directive.

Dornbusch and Scott cite other studies with similar findings, which seem to support hypothesized kinds of control and effectiveneness needs to knowledge use in school improvement. Many attempts at school improvement, in areas such as curriculum, instruction, attitudes, and organization, are complex, with imprecise goals, low predictability regarding outcomes, and uncertain efficacy. Given such ambiguity, educators may "resist" proposed changes unless they are able to judge for themselves that (1) the proposed change has high probability of making improvements in an area of need (need for effectiveness), and (2) they are likely to be able to control the proposed change in order to guide and adapt it under ambiguous and unpredictable circumstances (need for control).

Need for Socialization

The need for socialization is a well documented drive related to people's inherent social nature (McClelland, 1953). The degree to which friendly, cooperative, and supportive relationships exist in schools is related to their capacities for problem-solving and to their uses of knowledge in school improvement. Runkel (1978), for example includes "teacher's supportive relationships" as a factor in his causal model of staff problem-solving: "If work in schools is done cooperatively (collaboratively) instead of competitively, trust rises, affection rises, and the school can reap the benefits" (p. 80).

Knowledge Dissemination as Instruction

In addition to school characteristics and climate, and personal concerns and psychological traits, the means of imparting knowledge must be considered. The social means of imparting professional knowledge

in educational staff development, of course, is the workshop or institute. And one obvious unit of comparison for teachers and other staff is the classroom.

Thus the usual expectations of classroom learning should be taken into account in the study of the process of knowledge use. These include the expression of the goals and activities, the subject matter, the length of the experience, the specific means of imparting knowledge, and the opportunities for putting knowledge into practice (Genova, 1976; Walberg, 1981).

In summary, several sets of factors should be examined in gaining an understanding and possibly improving the process of knowledge use by educational staff. An attempt was made to represent all of these in the research reported below.

Method

Instrument

A 15-page, 52-item questionnaire was developed to measure the factors thought productive of knowledge use in staff development as discussed in the previous sections and shown in Figure 1. The items were drafted

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Insert Figure 1 about here

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or adapted from previous studies of staff development (Genova, 1976) and school climate (Genova and Walberg, 1977, 1979). Tables 1 and 2 show the items on staff background and personal characteristics; Tables 3

Insert Tables 1 through 6 about here

and 4, school characteristics and climate; Table 5, workshop characteristics, and, Table 6, the impacts in knowledge use.

In the analysis, many of the items were entered as separate variables. Correlational, factor, and reliability analyses, however, supported the a priori assignment of several sets of items such as personal traits and climate to composite scales. Since it was suspected that teachers would be more perceptive of classroom knowledge use, and others, especially administrators would be more perceptive of extra-class impacts, the impact items were scored in three different ways as indicated in Table 6.

As shown in the respective tables, the internal-consistency reliabilities of the composite scales are mostly moderate, although the reliability of one of the climate scales--Options--is far less than desirable, and the reliabilities of the knowledge-use impact measures are surprisingly high. A deliberate choice was made in designing the questionnaire to measure, with moderate reliability, a reasonably comprehensive set of factors, each with relatively few items rather than a few factors, each with many items and higher reliability. Thus the distribution of mostly moderate reliabilities was anticipated; and the correlations reported in a subsequent section under-estimate to a small to moderate degree the associations of staff, school, and workshop characteristics with impacts.

Sample

The Commonwealth Inservice Institute of the Massachusetts Department of Education plans, coordinates, and helps design and fund workshops or institutes for teachers and other school district staff throughout the

state. With the cooperation of this agency, a stratified random sample of workshops was drawn. Four major topic categories of workshops were first chosen--basic skills, students with special needs, student career needs, and gifted and talented students. Seventy-eight workshops in these categories were randomly drawn from the six state geographic regions.

A participant from each workshop was paid $20 to solicit eight randomly drawn participants from each workshop to complete the questionnaire. To encourage a reasonable return rate, a $5 honorarium and assurred confidentiality were offered to each randomly selected participant. A total of 467 participants or 74.8 percent of the 624 potential sample mailed in questionnaires; this represents an average of 6.0 respondents for each workshop.

Analysis

In path analytic or regression terms, five sets of variables were considered potential influences on knowledge use impact: background and psychological traits of the participants; school characteristics and climate; and workshop features (see Figure 1 and Tables 1 through 5). School climate and workshop features, however, were singled out for special analysis since they are potentially or relatively alterable unlike the individual and school characteristics that are relatively more stable or fixed. Because climate and the workshop variables are potentially alterable, they can be considered policy variables subject to modification by those both within and outside schools to improve knowledge use, provided that they are significantly associated with knowledge use.

The individual and school characteristics, moreover, can be considered causally prior to the alterable variables. For example, a teacher's sex

and years of experience (see Table 1), personal traits (Table 2), and school characteristics (Table 3) may cause their reactions to features of a workshop (Table 5), but the reverse causes are less likely. Similarly, school climate (Table 4) seems more likely to be influenced by, than to influence, these prior, less alterable variables.

According to this rationale, the correlations of the relatively stable and unalterable variables (Tables 1, 2, and 3) were calculated as a matter of interest to find out what individual and school characteristics are associated with impact, but partial correlations of school climate and workshop features (Tables 4 and 5) with impacts were calculated with the less alterable variables controlled. These correlations remove the covariation attributable to less alterable variables from the association of climate and workshop features with impact and provide a more stringent test of the hypothesis that these alterable variables influence knowledge use. Thus the assumptions in Figure 1 are that the less alterable variables may influence the alterable ones and impact, but the more alterable variables do not influence the less alterable, but may influence and therefore can be tested statistically for their controlled influence on impact.

Results and Discussion

Sample Characteristics

Table 1 shows that about 80 percent of the sample are women with a wide range of education, experience in their present school, and age. Slightly more than half the sample are regular classroom teachers; about 11 percent are part- or full-time administrators, and 23 percent are specialists of various kinds (see Table 1).

Table 2 shows that the greatest personal concerns in the sample have to do with the staff members' own classroom and students, closest fellow staff members, department or grade-level unit, and school building as a whole. Less concern is expressed for the school system, professional associations, parents, and community.

Table 3 shows that the workshop participants rated their schools on average as relatively informal, clear, warm, interesting, challenging, directive, and manageable. They also rated their schools as relatively less passive, unfriendly, ineffective, and unalterable.

Workshop Features

Table 5 shows the chief focuses and other features of the workshops. The most frequent major reasons checked for the workshops concern classroom skills, special student needs, self-awareness in teaching style, and the design and establishment of student programs. Favorable workshop characteristics were indicated by majorities of the sample, but only about 40 percent felt that they had been clearly informed about them in advance.

The source of the ideas for the workshops are numerous. About 15 percent of the participants felt the workshops were their own idea, but 76 percent volunteered to attend out of their own interest.

On average, about 17 or 18 participants attended and received about 22 hours of training. Although eight means of imparting information were indicted by about a third or more of the participants, consultant lecturing was by far the most frequently checked, which was followed by distributed information packages.

Although national statistics are unavailable on workshop characteristics

and most of the other important variables measured, it appears that the sample as a whole is reasonably typical and, as shown in the tables, covers broad ranges of background and experience. Samples of workshop participants from other parts of the country would seem likely to fall within the general ranges of the present one.

Individual and School Correlations

Table 7 shows the multiple correlations of three measures of knowledge use impact (see Table 6 for coding and reliabilities) with sets of control, climate, and workshop variables. Table 1 shows that background characteristics such as sex and age as a set are insignificantly associated with rated impacts, although teachers who have taken relatively more recent semester hours of instruction perceived significantly greater knowledge use impact of the workshops. Those staying in their present jobs in the school system were also likely on average to gain and make use of knowledge presented in the workshops (Table 1).

Insert Table 7 about here

Table 7 shows that the sets of the participants' spheres of personal concern and personal traits are significantly associated with knowledge use impacts. Table 2 shows the specific simple correlations. Greater amounts of concern with nearly all the aspects of the educational system and higher scores on needs for Achievement, except in the case of classroom impact, and Socialization are weakly but significantly associated with greater knowledge use impact. Although the correlations are small, they are all in the expected positive direction.

Table 7 shows that school characteristics as a set are significantly correlated with knowledge use impact. Table 3 shows that teachers in schools that they rated informal, clear, warm, interesting, challenging, and manageable perceived significantly greater workshop impact on knowledge use; and those in schools rated guarded, tense, passive, unfriendly, ineffective, fragmented, and unalterable perceived signifiantly less impact of the workshops. There were also significant tendencies for teachers from elementary schools to perceive greater classroom impact than secondary school teachers did, and those attending multiple-school workshops to perceive less classroom and other impact of the workshops than teachers who attended single-school workshops.

Climate and Workshop Correlates

Table 7 shows that adding the school climate variables to the control variables regressions raises the multiple regressions from about .40 to about .50; adding the workshop features raises the correlations from about .40 to the range of .68 and .77. Adding both climate and workshop features raises the multiple correlations to the range of .70 to .80, about the limits of the reliabilities of the independent variables (Table 6), and the complete equations containing the climate and workshop variables are significant at the .01 level. Moreover, many of the specific partial correlations in Table 5 and 6 that control for individual and school characteristics are substantially more highly correlated with impact than any of the control variables in Tables 1 through 3.

The partial correlations of school climate and workshop features with classroom impact were computed separately for the 263 regular classroom

teachers as were the correlations of climate and workshop features with other impacts for the 204 other school staff (see Table 6 for scoring of impact measures). These partial correlations as well as those for the total sample are shown in Tables 4 and 5.

The larger and more consistent and significant partial correlations of school climate and impact involve seven variables. In addition to the content of sample items given in Table 4, the other items measuring the seven variables contain the following aspects:

Equal Treatment--outstanding teachers in the school given recognition, non-teaching duties distributed throughout staff, and the best students always assigned to same teachers (reversed in scoring);

Integration--staff divided into small groups that don't talk to each other (reversed), staff not members of a group are on their own (reversed), and staff from different departments frequently talk;

Learning Orientation--teachers value learning interpersonal skills, marks are more important than learning (reversed), and teachers regard inservice courses as a waste of time (reversed);

Expressiveness--teachers afraid to express ideas (reversed), originality in teaching respected, and teachers can be themselves;

Goal Direction--teachers confused as to what is expected of them (reversed); goals are realistic given the types of students, and what you have to do to get ahead is clear;

Dealing with Problems--nothing is done about problems (reversed), problems never solved (reversed), and decisions are left vague (reversed); and

the amount and qualities of instruction were. Workshops that met a longer number of hours were rated as having a greater impact. Four alterable features of the workshops were significantly associated with impacts, with individual and school characteristics controlled. Clear advance explanation of the workshop, effective and interesting instruction, subject matter relevant to job, and practical skills presented. Three methods of presenting information were also significantly associated with knowledge use impact: small group discussions, practice implementation of knowledge or observing consultants or other participatns at workshops sessions, and practice implementation in work settings.

Conclusion

It should be recognized that the results are correlational. To some extent, the prevalence of voluntary choice and continuance at some workshops, the possible superiority of some school districts that not only leads to effective workshops, but also more satisfying school climates and knowledge utilization, and other causal ambiguities suggest caution in generalizing the findings.

At the same time, it is apparent that a number of aspects of individual educators, their schools, and their workshops are significantly associated with their use of knowledge. The significant associations in general provide support for models of the development of professional knowledge use derived from educational, psychological, and organizational literature discussed in the introduction. The school climate and workshop feature associations, that are controlled for individual and school characteristics, should be of particular interest for future research and in designing

educational innovation and dissemination programs not only because of the correspondence of the findings here with research in other settings but also because these variables, unlike individual personality and background, are subject to alteration to increase knowledge and educational effectiveness.

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Footnote

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Table 1

Background Characteristics of Workshop Participants

and Correlations With Workshop Impacts

Variable and percentage responses		Correlation With Impact: Classroom	Other	Total
Female (coded sequentially 1 and 2)		-.05	-.04	.00
Male	19.4%			
Female	80.6%			
Highest degree (coded sequentially 1, 2, 3, etc.)		.05	.08*	.05
Bachelors	35.7%			
Masters	36.6%			
Masters plus 30 hours	21.2%			
Certificate of advanced study	4.1%			
All but dissertation	1.7%			
Doctoral	.6%			
Years in present school		-.01	.11**	.06
1	5.2%			
2	6.9%			
3	5.8%			
4-5	11.8%			
6-10	34.3%			
11-15	24.7%			
16-20	8.2%			
21 or more	3.2%			

Table 1 (continued)

Variable and percentage responses		Correlation With Impact: Classroom	Other	Total
Age range in years				
(coded sequentially 1, 2, 3, etc.)		-.01	.04	.00
20-25	3.0%			
26-30	17.4%			
31-35	28.3%			
36-40	16.7%			
41-50	20.4%			
51 or older	14.2%			
Role in school				
Classroom teacher	56.7%	.02	-.04	-.05
Full-time administrator	3.9%			
Teacher and administrator	7.8%	.02	.04	.04
Specialist, e.g., counselor and remedial reading teacher	22.6%	-.04	.02	.02
Teachers aide	.6%			
Other	8.2%			

Table 1 (continued)

Variable and percentage responses		Correlation With Impact: Classroom	Other	Total
Semester hours taken in college or other institutesions in the last two years		.09*	.11**	10.*
None	5.0%			
Less than 5	26.9%			
5-10	36.9%			
11-20	16.6%			
21-30	8.0%			
More than 30	6.7%			
Job status in school sytems for next year		.03	.11**	.12**
Definitely leaving	8.8%			
Unsure	25.2%			
Definitely staying	66.0%			

NOTE: One and two asterisks respectively indicate correlations significant at the .05 and .01 levels in all tables.

Table 2

Psychological Traits of Workshop Participants

and Correlations With Workshop Impact

Sphere of Personal Concern: How much personal concern do you have for what happens regarding (coded from 1 = none or very little to 5 = high):

			Correlation With Impact		
	Mean	Standard Deviation	Classroom	Other	Total
Your own classroom(s) and students.	4.77	.44	.06	.08*	.11**
The classrooms and students of other teachers in your school.	3.75	.77	.13**	.10**	.15**
A few of your closest fellow staff members.	4.33	.68	.08*	.11**	.15**
Your department or grade level unit.	4.33	.74	.06	.12**	.17**
Your school building as a whole.	4.09	.72	.13**	.13**	.19**
Your school system as a whole.	3.01	.80	.11**	.18**	.21**
Your professional association(s) or union(s).	3.32	.95	.00	.17**	.14**
The parents of students that you teach.	3.83	.83	.11**	.17**	.20**
The community in which your school is located.	3.67	.86	.09*	.18**	.18**
Achievement (.74): Excell at every endeavor.	26.66	3.48	.07	.11**	.12**
Power (.72): Take charge of situations	21.06	3.58	.03	.05	.07
Socialization (.66): Have a close relationship with your fellow workers	23.86	3.49	.11**	.13**	.16**

NOTE: The composite scales are the sums of the corresponding personal trait items.

Table 3

School Characteristics and Correlations With Workshop Impacts

			Correlation With Impact		
	Mean	Standard Deviation	Classroom	Other	Total
Small - large	3.63	1.85	-.03	.06	.08*
Formal - informal	4.49	1.48	.12**	.04	.08*
Simple - complex	3.96	1.48	.00	.01	.01
Open - guarded	3.73	1.56	-.13**	-.08*	-.13**
Casual - serious	3.96	1.40	-.05	-.01	-.05
Confusing - clear	4.83	1.51	.08*	.11**	.10*
Relaxed - tense	3.40	1.57	-.08*	-.10*	-.09*
Cold - warm	5.03	1.46	.20**	.18**	.19**
Active - passive	3.06	1.55	-.19**	-.19**	-.22**
Boring - interesting	5.21	1.29	.20**	.18**	.23**
Friendly - unfriendly	2.63	1.46	-.18**	-.17**	-.20**
Static - challenging	4.85	1.49	.17**	.16**	.20**
Effective - ineffective	2.78	1.44	-.14**	-.12**	-.15**
Non-directive - directive	4.72	1.43	.01	.05	-.01
Unified - fragmented	3.67	1.65	-.18**	-.16**	-.18**
Un-manageable - manageable	5.31	1.36	.16**	.15**	.16**
Alterable - unalterable	3.04	1.35	-.15**	-.09*	-.16**

Table 3 (continued)

		Correlation With Impact		
		Classroom	Other	Total
Other School Characteristic				
Present school not elementary	36.4%			
Present school elementary	63.6%	.09*	.02	.07
School origins of workshop participants				
Single school	63.6%			
More than one school	36.4	-.10*	-.09*	.04

Table 4

School Climate Statistics and Partial Correlations With Impacts*

School Climate (4-item scales score 1 - strongly disagree to 4 = strongly agree, sample items and reliabilities given.	Partial Correlation With Impact				
	Complete Sample			Teachers	Others
	Classroom	Other	Total	on Classroom	on Other
Community: The staff inthis school know each other by their first names (.49)	.12*	.04	.11	.14	-.02
Accessibility: It is easy to find people to talk to in this school (.57)	.07	.07	.09	.15	-.12
Involvement: Most of the staff attend student functions and activities (.65)	.11	.07	.10	.07	.20
Equal Treatment: You get ahead here by working hard (.49)	.20**	.18**	.23**	.25**	.15
Integration: Staff from different departments often plan courses or programs together (.66)	.14*	.13*	.15**	.11	.18
Learning Orientation: This school provides opportunities for professional improvement and promotion (.54)	.19**	.12*	.22**	.19**	.21
Expressiveness: Creative work by teachers is respected here (.71)	.17**	.09	.13	.21**	.06

Table 4 (continued)

	Partial Correlation With Impact				
	Complete Sample			Teachers	Others
	Classroom	Other	Total	on Classroom	on Others
Goal Direction: The goals of this school are clearly understood by most teachers (.53)	.20**	.17*	.21**	.31**	-.02
Challenge: Administrators here place high expectations on teachers (.63)	.04	.06	.07	.04	-.02
Dealing with Problems: Teachers here are able to talk openly about school problems (.76)	.17**	.13*	.16**	.23**	.07
Order: School rules and procedures apply to everyone equally (.64)	.03	.03	.06	-.02	.03
Options: Teachers don't have much choice about which classes they teach (reversed, .20)	.12*	.09	.10	.15*	-.05
Influence Distribution: Teachers help to make the rules in this school (.78)	.07	.07	.08	.14*	-.12

*The partial correlations are controlled for the individual and school characteristics listed in Tables 1 through 3.

Table 5

Workshop Features and Partial Correlations With Impacts *

Variable and Univariate Statistics		Partial Correlation With Impact				
		Complete Sample			Teachers	Others
		Classroom	Other	Total	on Classroom	on Other
Focus of Workshop (would indicate one or more)						
Basic skills, e.g., reading and mathematics	34.4%	.14*	.09	.15*	.19**	.03
Students with special needs	26.3%	-.03	.00	.00	-.02	.04
Career needs of students	11.6%	-.10	-.02	-.06	-.17	.06
Gifted and talented students	30.6%	-.03	-.03	-.09	-.02	-.06
Discipline and student behavior	13.5%	.19**	.11	.13*	.23**	.02
Nutrition education	2.4%	-.02	-.06	-.04	-.02	-.03
Other	14.8%					

Table 5 (continued)

Reason for workshop training (could indicate one or more)		Partial Correlations With Impact: Complete Sample Classroom	Complete Sample Other	Complete Sample Total	Teachers on Classroom	Others on Other
Develop or improve classroom skills	69.2%	.12*	.08	.11	.12	.11
Overcome bias and stereotyping	21.4%	-.10	-.07	-.11	-.18*	.07
Develop awareness of special student needs	48.0%	-.15**	-.11	-.18**	-.19**	-.02
Learn colleagial skills	10.9%	.18**	.15**	.13*	.20**	.18
Develop self-awareness in teaching styles	36.2%	.17**	.11	.11	.16*	.03
Learn to utilize community resources	25.9%	.05	.11	.06	.00	.28*
Develop counseling and communication skills	11.8%	.13*	.00	.07	.09	.02
Learn to design and establish student programs	36.4%	.10	.10	.05	.09	.13
Assess needs of special students	19.5%	-.09	-.16**	-.11	-.16*	-.07
Learn to deal with student behavior problems	18.0	.13*	.08	.10	.15*	.03
Other	12.4%					

Table 5 (continued)

		Partial Correlations With Impact				
		Complete Sample			Teachers	Others
Source of idea for workshop (could indicate one or more)		Classroom	Other	Total	on Classroom	on Other
Participant	15.4%	.16**	.12*	.14*	.12*	.21*
Participant's closest colleagues	11.8%	.10	.09	.14	.07	.07
Other staff members	42.0%	-.04	-.01	-.05	.01	.02
Supervisor	8.4%	.05	.11	.09	.13	.03
Building principal	10.9%	.07	.01	.02	.08	-.05
Superintendent	2.1%	.02	.08	.05	-.04	.16
Outside consultant	3.2%	.20**	.20**	.17**	.15*	.21*
Unknown	10.7%	-.15*	-.11	-.11	-.16*	-.07
Other	16.9%	.03	.07	-.01	.02	.02
Reason for attending workshop (could indicate one or more)						
Participant initiated idea	13.9%	.17**	.05	.07	.09	.18
Asked by colleague or administrator	19.7%	-.02	0.03	-.06	-.02	.00
Volunteered out of interest	72.6%	.01	.06	.11	.01	.09
Was ordered to attend	7.5%	-.12*	-.09	-.17**	-.09	-.27*
Other	8.6%	.01	-.03	.04	-.01	-.07

Table 5 (continued)

		Partial Correlations With Impact				
		Complete Sample			Teachers	Others
		Classroom	Other	Total	on Classroom	on Other
Total hours of inservice training		.27**	.24**	.33	.25*	.27*
Mean	21.81					
Standard deviation	15.49					
Range	1-80					
Average number of people at training sessions		-.05	.04	.01	-.09	.11
Mean	17.50					
Standard deviation	10.75					
Range	1-75					
Workshop characteristics (could indicate more than one)						
Explained clearly in advance	40.5%	.18**	.23**	.27**	.19**	.38**
Effective and interesting instruction	70.9%	.24**	.21**	.35**	.30**	.18*
Subject matter relevant to job	64.0%	.32**	.23**	.32**	.31**	.08
Practical skills presented	73.9%	.31**	.21**	.40**	.37**	.21*

Table 5 (continued)

		Partial Correlations With Impact				
		Complete Sample			Teachers	Others
		Classroom	Other	Total	on Classroom	on Other
Method of presenting workshop information						
Doing homework given at sessions	29.8%	.02	.02	.12*	.04	.01
Consultant lecturing	79.7%	-.03	-.08	-.02	-.03	-.03
Small group discussions	49.9%	.21**	.12*	.23**	.15*	.11
Information packages	58.5%	-.01	-.07	.02	-.04	-.08
Practice implementation at sessions	41.5%	.17**	.23**	.24**	.20**	.25*
Observing participants or consultants	31.5%	.23**	.22**	.27**	.30**	.33**
Practicing techniques in work setting	52.5%	.31**	.14*	.32**	.35**	.14

*The partial correlations are controlled for individual and school characteristics listed in Tables 1 through 3.

Table 6

Impact Characteristics

Category and Item (ranging from 1 = very little or none to 5 = extremely high)	Mean	Standard Deviation
Amount of new information, skills, or ideas gained from (scored 1 - very little or none to 2 = extremely high):		
1. The instructor (or consultant)	3.74	.95
2. Written materials (handouts, readings, etc.)	3.38	.97
3. Discussion with other participants	3.38	.96
Practical orientation of new information, skills, or ideas gained from:		
4. The instructor (or consultant)	3.72	.98
5. Written materials	3.27	1.00
6. Discussion with other participants	3.34	.97
Extent to which you have used (applied) new infromation, skills, or ideas gained from:		
7. The instructor (or consultant)	3.37	1.03
8. Written materials	3.03	1.07
9. Discussion with other participants	3.07	1.05
Level of impact		
10. Your own classroom(s) and students	3.28	1.01
11. The classroom and students of other teachers in your school	2.91	.98
12. A few of your closest, fellow staff members	3.08	1.00

Table 6 (continued)

	Mean	Standard Deviation
13. Your department or grade level unit	3.03	1.05
14. Your school bulding as a whole	2.76	.97
15. Your school system as a whole	2.45	.95
16. Your professional association(s) or union(s)	1.70	.83
17. The parents of students	2.40	1.16
18. The community in which your school is located	2.09	1.01
19. Extent to which inservice workshop training met expectations (coded 1 to 4 in order indicated in Table 5)	3.44	.66

Not at all	11.0%
Very little	6.3%
Somewhat	39.8%
A great deal	52.8%

Note: Impact items were scored in three ways: classroom impact or the sum of items 10 and 11 (reliability = .69), other impact or the sum of items 12 through 18 (reliability = .87), and total impact or the sum of all 19 items (reliability = .93).

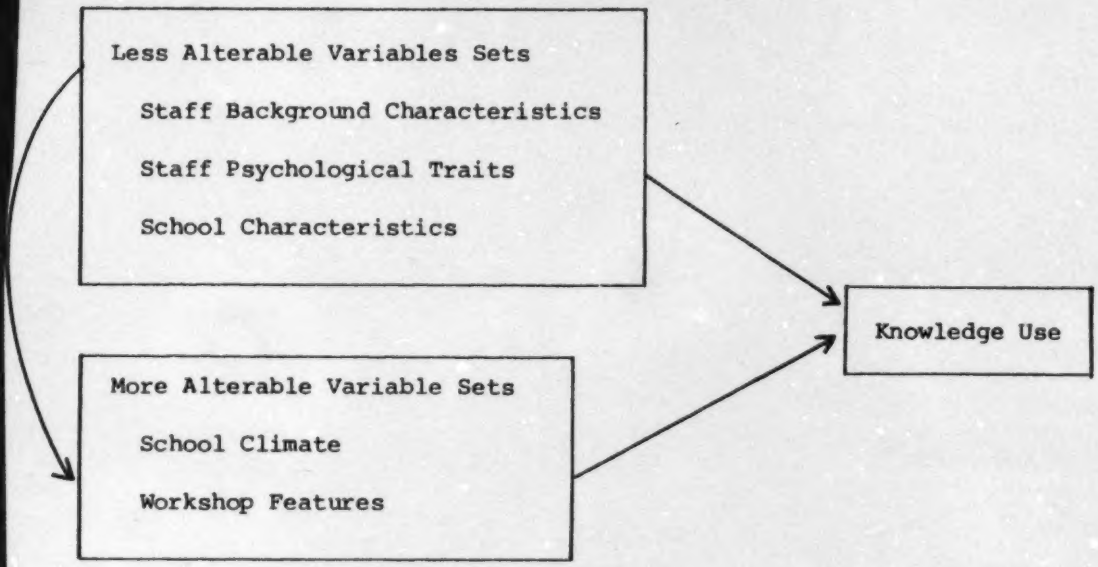

Figure 1: Path diagram of possible influences on knowledge utilization

Table 7

Multiple Correlations of Impacts With

Sets of Control and Independent Variables

	Multiple Correlation With Impact		
Variables Entered in Equation	Classroom	Other	Total
Control Variables			
Background characterisitics of participants	.17	.21	.20
Sphere of concern of participants	.22*	.22*	.26**
Personal traits	.13	.20**	.19**
School characteristics	.30*	.30*	.30*
All Control Variables Above	.39	.42**	.43**
All Control Variables and School Climate	.49**	.48**	.51**
All Control Variables and Workshop Features	.73**	.68**	.77**
All Control Variables, School Climate, and Workshop Features	.76**	.70**	.80**